

PATENT ABSTRACTS OF JAPAN

(11)Publication number : 08-034422
 (43)Date of publication of application : 06.02.1996

(51)Int.Cl. B65D 1/02
 A61J 1/05

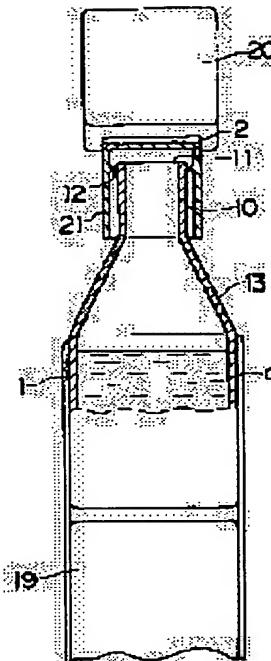
(21)Application number : 06-171346 (71)Applicant : TAISHO PHARMACEUT CO LTD
 (22)Date of filing : 22.07.1994 (72)Inventor : OTSUKI TOMOHIRO
 TANAKA SHIGEO
 OUCHI JUNKO

(54) BOTTLE-LIKE CONTAINER FOR LIQUID

(57)Abstract:

PURPOSE: To prevent liquid contents from scattering from a container when it is opened by breaking off its fused part, in a bottle-like container wherein a synthetic resin-made cap is fusibly sealed around the outer periphery of the top opening of the neck part continuously extending from the synthetic resin-made body part for filling liquid and the fused part is broken off to open the container.

CONSTITUTION: A skirt part 21 is formed at the lower part of a cap 2 in such a way as to cover a neck part 10 wholly or partly. A partition plate or raised part is formed within the neck part 10 so as to divide the flow cross section of the neck part 10. A constricted or swollen part is formed in the neck part 10.



LEGAL STATUS

[Date of request for examination] 06.07.2001

[Date of sending the examiner's decision of rejection]

[Kind of final disposal of application other than the examiner's decision of rejection or application converted registration]

[Date of final disposal for application]

[Patent number] 3482246

[Date of registration] 10.10.2003

[Number of appeal against examiner's decision of rejection]

[Date of requesting appeal against examiner's decision of rejection]

[Date of extinction of right]

* NOTICES *

JPO and NCIPI are not responsible for any damages caused by the use of this translation.

1. This document has been translated by computer. So the translation may not reflect the original precisely.
- 2.**** shows the word which can not be translated.
3. In the drawings, any words are not translated.

CLAIMS

[Claim(s)]

[Claim 1] The bottle description machine containing a liquid characterize by to be form the skirt-board section 21 in the lower part of said cap 2 in all or a part of said neck 10 at the wrap condition in the bottle description machine constituted so that the welding closure of the cap 2 made of synthetic resin might be carried out to a periphery and opening of the welding section 12 concerned might be fracture and carried out to the upper-limit opening 11 of the neck 10 which follow the body section 1 made of synthetic resin with which the liquid be filled up .

[Claim 2] The bottle description machine containing a liquid according to claim 1 with the wavelike locus of said welding section 12 which are, and it carries out and is zigzag-like.

[Claim 3] In the upper limit opening 11 of the neck 10 which follows the body section 1 made of synthetic resin with which the liquid was filled up In the bottle description machine constituted so that the welding closure of the cap 2 made of synthetic resin might be carried out to a periphery and opening of the welding section 12 concerned might be fractured and carried out to said neck 10 The bottle description machine containing a liquid characterized by forming at least one neck 14 in the condition that a circulation cross section becomes narrow at extent to which the liquid in said body section 1 does not go up in the direction of said opening 11.

[Claim 4] In the upper limit opening 11 of the neck 10 which follows the body section 1 made of synthetic resin with which the liquid was filled up In the bottle description machine constituted so that the welding closure of the cap 2 made of synthetic resin might be carried out to a periphery and opening of the welding section 12 concerned might be fractured and carried out said neck 10 The bottle description machine containing a liquid characterized by forming the circulation cross section in extent to which the liquid in said body section 1 does not go up in the direction of said opening 11 narrowly.

[Claim 5] The bottle description machine containing a liquid characterized by to form the curtain board 15 in the condition divide the circulation cross section of the neck 10 concerned inside said neck 10 in the bottle description machine constituted so that the welding closure of the cap 2 made of synthetic resin might be carried out to a periphery and opening of the welding section 12 concerned might be fractured and carried out to the upper-limit opening 11 of the neck 10 which follows the body section 1 made of synthetic resin with which the liquid was filled up .

[Claim 6] In the upper limit opening 11 of the neck 10 which follows the body section 1 made of synthetic resin with which the liquid was filled up In the bottle description machine constituted so that the welding closure of the cap 2 made of synthetic resin might be carried out to a periphery and opening of the welding section 12 concerned might be fractured and carried out The bottle description machine containing a liquid characterized by forming in the overall length of the wall section of said neck 10, or a part of its die-length direction the protruding line 16 which meets in the die-length direction of the neck 10 concerned.

[Claim 7] it be the bottle description machine containing a liquid characterize by for the circulation cross section of said neck 10 not to have the internal cross section and the great difference of said body section 1 in the bottle description machine constituted so that the welding closure of the cap 2 made of synthetic resin might be carried out to a periphery and opening of the welding section 12 concerned might be fracture and carried out to the upper limit opening 11 of the neck 10 which follow the body section 1 made of synthetic resin with which the liquid be filled up .

[Claim 8] The bottle description machine containing a liquid characterized by being constituted so that opening 11 may be formed in the shoulder 13 which follows the body section 1 made of synthetic resin with which the liquid was filled up at upper limit, the welding closure of the inner circumference of the cap 2 made of synthetic resin may be carried out to the opening 11 concerned at a periphery and opening of the welding section 12 concerned may be fractured and carried out.

[Claim 9] In the upper limit opening 11 of the neck 10 which follows the body section 1 made of synthetic resin with which the liquid was filled up Said neck 10 is a bottle description machine containing a liquid characterized by being formed in extent to which the liquid in said body section 1 does not go up in the direction of said opening 11 in the bottle description machine constituted so that the welding closure of the cap 2 made of synthetic resin might be carried out to a periphery and opening of the welding section 12 concerned might be fractured and carried out for a long time .

[Claim 10] It is the bottle description machine containing a liquid characterized by said neck 10 having bent in the bottle description machine constituted so that the welding closure of the cap 2 made of synthetic resin might be carried out to a periphery and opening of the welding section 12 concerned might be fractured and carried out to the upper limit opening 11 of the neck 10 which follows the body section 1 made of synthetic resin with which the liquid was filled up .

[Claim 11] the bottle description machine containing a liquid characterize at said neck 10 in the bottle description machine constituted so that the welding closure of the cap 2 made of synthetic resin might be carried out to a periphery and opening of the welding section 12 concerned might be fracture and carried out to the upper limit opening 11 of the neck 10 which follow the body section 1 made of synthetic resin with which the liquid be filled up by to form at least one swelling section 18 in the condition that a circulation cross section become large .

[Claim 12] The bottle description machine containing a liquid given in either of claims 3, 4, 9, 10, and 11 by which one or some tabular reinforcing ribs 17 are formed in the condition of following the shoulder 13 of said body section 1 along the

die-length direction of the neck 10 concerned at the periphery of said neck 10.

[Claim 13] The bottle description machine containing a liquid characterized by to be formed the piece 22 of a circulation failure which rushes in into said neck 10 inside said cap in the bottle description machine constituted so that the welding closure of the cap 2 made of synthetic resin might be carried out to a periphery and opening of the welding section 12 concerned might be fractured and carried out to the upper-limit opening 11 of the neck 10 which follows the body section 1 made of synthetic resin with which the liquid was filled up .

[Claim 14] The bottle description machine containing a liquid characterized by to form the inside plug 23 which rushes in into said neck 10 inside said cap in the bottle description machine constituted so that the welding closure of the cap 2 made of synthetic resin might be carried out to a periphery and opening of the welding section 12 concerned might be fractured and carried out to the upper limit opening 11 of the neck 10 which follows the body section 1 made of synthetic resin with which the liquid was filled up .

[Claim 15] The bottle description machine containing a liquid characterized by packing the piece 3 of continuation pore porosity in said neck 10 in the bottle description machine constituted so that the welding closure of the cap 2 made of synthetic resin might be carried out to a periphery and opening of the welding section 12 concerned might be fractured and carried out to the upper limit opening 11 of the neck 10 which follows the body section 1 made of synthetic resin with which the liquid was filled up .

[Claim 16] The bottle description machine containing a liquid characterized by carrying out the welding closure of the cap 2 of the shape of an inside plug made of synthetic resin to the upper limit opening 11 of the neck 10 which follows the body section 1 made of synthetic resin with which the liquid was filled up inside.

[Claim 17] The bottle description machine containing a liquid according to claim 1 to 16 said whose liquids are drugs.

[Translation done.]

* NOTICES *

JPO and NCIPI are not responsible for any damages caused by the use of this translation.

- 1.This document has been translated by computer. So the translation may not reflect the original precisely.
- 2.**** shows the word which can not be translated.
- 3.In the drawings, any words are not translated.

DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Industrial Application] Generally this invention relates to the bottle description machine containing a liquid. It be the container made of synthetic resin filled up with the liquid of comparatively little eye lotion and others of 1 time thru/or the extent use by several times, and the welding closure of the cap be carry out to opening (mouth of a bottle), and it be still more specifically relate with the bottle description machine containing a liquid constituted so that fracture opening of said welding section might be carried out by push said cap against the direction of torsion or the body of a container at the time of use .

[0002]

[Description of the Prior Art] The piece 19 of maintenance is formed in the pars basilaris ossis occipitalis of the body section 1 made of synthetic resin filled up with the liquids a, such as an eye lotion, at one, the neck 10 is formed in the body section 1 through the shoulder 13 at one, and welding of the cap 2 is carried out to the periphery of the opening 11 of a neck 10 so that this kind of common bottle description machine containing a liquid may be illustrated by drawing 20 and drawing 21 . The piece 20 of maintenance is formed in the upper part of cap 2 at one, and at the time of use, while having the piece 19 of maintenance by one hand, it has the piece 20 of maintenance of cap 2 by the hand of another side, and opening is carried out by twisting cap 2, or pushing against the direction of the body section 1, and fracturing the welding section 12. Although this kind of bottle description machine is filled up with Liquid a and may be marketed a piece every, plastic filling of it is carried out in the condition of having usually ranked with the longitudinal direction partly (for example, six pieces), and it is packed and marketed with the package film which does not illustrate this.

[0003] The 1st metal mold which fabricates the body section 1 containing the piece 19 of maintenance, a shoulder 13, and a neck 10, the 2nd metal mold which carries out welding of the cap 2 concerned to the periphery of opening 11 while fabricating cap 2, and 3 sets of half cut metal mold (neither of the metal mold is illustrated) which consists of maintenance metal mold are used for such a bottle description machine, and carries out blow molding as follows, and it is filled up with Liquid a.

[0004] It sets to the condition of having made each metal mold counter to a shaping posture, and having detached it right and left, the thermoplastic synthetic resin fused between metal mold on either side is made tubed (parison), and is extruded, and parison makes only the 1st metal mold coalesce, where [suitable] die-length push appearance is carried out, and separates the upper limit of parison from an extrusion nozzle (not shown). The body section 1 containing the piece 19 of maintenance, a shoulder 13, and a neck 10 is fabricated by making the upper limit of that parison hold with the topmost maintenance metal mold which approached so that a suitable track might be maintained, moving each metal mold to a position in this condition, sending in the compressed air filtered in parison, and extending the parison concerned, while the 1st metal mold stops the lower limit of parison at this time. After discharging the compressed air in this condition, it is filled up with Liquid a in the body section 1 by the restoration nozzle which is not illustrated. The upper part part of parison is maintained at the fritting solution condition in this condition. And welding closure of the lower limit inner circumference of cap 2 and the periphery of opening 11 is carried out at the same time it fabricates cap 2 by making the 2nd metal mold of the mid-position coalesce.

[0005]

[Problem(s) to be Solved by the Invention] The bottle description machine with which it is fabricated as mentioned above, and fills up with Liquid a had often dispersed [said some of liquids a which are going up] around, when some liquids a with which it fills up in the body section 1 went up in the cap 2 inside section and cap 2 was opened as mentioned above, since the interior of the body section 1 had high pressure a little by pressurization by the compressed air.

[0006] The purpose of this invention is to offer the bottle description machine containing a liquid constituted so that the internal liquid a might not disperse, when said welding section 12 is fractured and opened.

[0007]

[Means for Solving the Problem and its Function] To the upper limit opening 11 of the neck 10 which follows the body section 1 made of synthetic resin with which the liquid was filled up, the 1st bottle description machine by this invention in order to attain the above-mentioned purpose In the bottle description machine constituted so that the welding closure of the cap 2 made of synthetic resin might be carried out to a periphery and opening of the welding section 12 concerned might be fractured and carried out, the skirt-board section 21 is formed in the lower part of said cap 2 for said all or a part of neck 10 at the wrap condition.

[0008] According to the 1st bottle description machine, when opening of the welding section 12 of cap 2 and opening 11 is fractured and carried out, since the liquid which has gone up and collected inside the cap 2 is interrupted by said skirt-board section 21, it does not disperse. In order that the locus of said welding section 12 may fracture gradually, without [wavelike] being, carrying out, and fracturing the welding section 12 concerned at a stretch if it is zigzag-like, scattering of the liquid which has collected inside the cap 2 is prevented still better.

[0009] To the upper limit opening 11 of the neck 10 which follows the body section 1 made of synthetic resin with which the liquid was filled up, the 2nd bottle description machine by this invention in order to attain the above-mentioned purpose In the bottle description machine constituted so that the welding closure of the cap 2 made of synthetic resin might be carried out to a periphery and opening of the welding section 12 concerned might be fractured and carried out to said neck 10 At least one neck 14 is formed in the condition that a circulation cross section becomes narrow at extent to which the liquid in said body section 1 does not go up in the direction of said opening 11.

[0010] Since the circulation cross section of a neck 10 is narrow by said neck 14, when some liquids with which it fills up in the body section 1 tend to go up to the direction of opening 11 according to the 2nd bottle description machine, the liquid plugs up said neck 14 with surface tension, and prevents a rise of a liquid with it.

[0011] To the upper limit opening 11 of the neck 10 which follows the body section 1 made of synthetic resin with which the liquid was filled up, the 3rd bottle description machine by this invention in order to attain the above-mentioned purpose In the bottle description machine constituted so that the welding closure of the cap 2 made of synthetic resin might be carried out to a periphery and opening of the welding section 12 concerned might be fractured and carried out, said neck 10 forms the circulation cross section in extent to which the liquid in said body section 1 does not go up in the direction of said opening 11 narrowly.

[0012] When some liquids with which it fills up in the body section 1 tend to go up to the direction of opening 11 according to the 3rd bottle description machine, since the circulation cross section of a neck 10 is narrow, a liquid closes the neck 10 with surface tension, and prevents a rise of a liquid with it.

[0013] To the upper limit opening 11 of the neck 10 which follows the body section 1 made of synthetic resin with which the liquid was filled up, the 4th bottle description machine by this invention in order to attain the above-mentioned purpose The curtain board 15 is formed in the condition of dividing the circulation cross section of the neck 10 concerned into the interior of said neck 10, in the bottle description machine constituted so that the welding closure of the cap 2 made of synthetic resin might be carried out to a periphery and opening of the welding section 12 concerned might be fractured and carried out.

[0014] Since the part with the curtain board 15 of said neck 10 is narrow when some liquids with which it fills up in the body section 1 tend to go up to the direction of opening 11 according to the 4th bottle description machine, a liquid closes the neck 10 with surface tension, and prevents a rise of a liquid with it.

[0015] To the upper limit opening 11 of the neck 10 which follows the body section 1 made of synthetic resin with which the liquid was filled up, the 5th bottle description machine by this invention in order to attain the above-mentioned purpose In the bottle description machine constituted so that the welding closure of the cap 2 made of synthetic resin might be carried out to a periphery and opening of the welding section 12 concerned might be fractured and carried out, the protruding line 16 which meets in the die-length direction of the neck 10 concerned is formed in the overall length of the wall section of said neck 10, or a part of its die-length direction.

[0016] Since the part with the protruding line 16 of said neck 10 is narrow when some liquids with which it fills up in the body section 1 tend to go up to the direction of opening 11 according to the 5th bottle description machine, a liquid closes the neck 10 with surface tension, and prevents a rise of a liquid with it.

[0017] To the upper limit opening 11 of the neck 10 which follows the body section 1 made of synthetic resin with which the liquid was filled up, the 6th bottle description machine by this invention in order to attain the above-mentioned purpose It is the bottle description machine containing a liquid characterized by the circulation cross section of said neck 10 not having the internal cross section and great difference of said body section 1 in the bottle description machine constituted so that the welding closure of the cap 2 made of synthetic resin might be carried out to a periphery and opening of the welding section 12 concerned might be fractured and carried out.

[0018] According to the 6th bottle description machine, the internal cross section and great difference of a body 1 do not have the circulation cross section of a neck 10. By striking the pars basilaris ossis occipitalis of the container against hard flat surfaces, such as a floor and a desk, where it shook in the vertical direction where the container is stood, or the container is stood Since the liquid which has gone up and collected inside the cap 2 descends easily into the body section 1, it can prevent scattering of the liquid at the time of opening by opening cap 2, where the liquid which has collected inside the cap 2 is dropped into the body section 1 as mentioned above.

[0019] In order to attain the above-mentioned purpose, the 7th bottle description machine by this invention is constituted so that opening 11 may be formed in the shoulder 13 which follows the body section 1 made of synthetic resin with which the liquid was filled up at upper limit, the welding closure of the inner circumference of the cap 2 made of synthetic resin may be carried out to the opening 11 concerned at a periphery and opening of the welding section 12 concerned may be fractured and carried out.

[0020] Since according to the 7th bottle description machine there is no neck and opening 11 is formed in the upper limit of a shoulder 13, By striking the pars basilaris ossis occipitalis of the container against hard flat surfaces, such as a floor and a desk, where it shook in the vertical direction where the container is stood, or the container is stood Since the liquid which has gone up and collected inside the cap 2 descends easily into the body section 1, it can prevent scattering of the liquid at the time of opening by opening cap 2, where the liquid which has collected inside the cap 2 is dropped into the body section 1 as mentioned above.

[0021] To the upper limit opening 11 of the neck 10 which follows the body section 1 made of synthetic resin with which the liquid was filled up, the 8th bottle description machine by this invention in order to attain the above-mentioned purpose In the bottle description machine constituted so that the welding closure of the cap 2 made of synthetic resin might be carried out to a periphery and opening of the welding section 12 concerned might be fractured and carried out, said neck 10 is formed in extent to which the liquid in said body section 1 does not go up in the direction of said opening 11 for a long time. Since according to the 8th bottle description machine the liquid in the body section 1 stops being able to go up easily and it is when the neck 10 is long, scattering of the liquid at the time of opening is prevented.

[0022] Where said neck 10 is bent, the 9th bottle description machine by this invention is fabricated in the bottle description machine constituted so that the welding closure of the cap 2 made of synthetic resin might be carried out to a

periphery and opening of the welding section 12 concerned might be fractured and carried out to the upper limit opening 11 of the neck 10 which follows the body section 1 made of synthetic resin with which the liquid was filled up, in order to attain the above-mentioned purpose. Since according to the 9th bottle description machine the neck 10 has bent and the liquid in the body section 1 has stopped being able to go up easily, scattering of the liquid at the time of opening is prevented.

[0023] To the upper limit opening 11 of the neck 10 which follows the body section 1 made of synthetic resin with which the liquid was filled up, the 10th bottle description machine by this invention in order to attain the above-mentioned purpose In the bottle description machine constituted so that the welding closure of the cap 2 made of synthetic resin might be carried out to a periphery and opening of the welding section 12 concerned might be fractured and carried out, it is characterized by forming at least one swelling section 18 in the condition that a circulation cross section becomes large at said neck 10. That is, when some liquids in the body section 1 go up by swelling to a neck 10 and forming the section 18, that liquid will stop in this swelling section 18, and liquid will not go up in the upper part from the swelling section 18.

[0024] In the said 2nd, 3rd, 8th, 9th, and 10th bottle description machines, it is desirable to form one or some tabular reinforcing ribs 17 in the condition of following the shoulder 13 of said body section 1 along the die-length direction of the neck 10 concerned on the periphery of a neck 10. By forming a reinforcing rib 17, it is because it can prevent that a neck 10 becomes brittle.

[0025] To the upper limit opening 11 of the neck 10 which follows the body section 1 made of synthetic resin with which the liquid was filled up, the 11th bottle description machine by this invention in order to attain the above-mentioned purpose In the bottle description machine constituted so that the welding closure of the cap 2 made of synthetic resin might be carried out to a periphery and opening of the welding section 12 concerned might be fractured and carried out, it is characterized by forming the piece 22 of a circulation failure which rushes in into said neck 10 inside said cap. That is, if said piece 22 of a circulation failure has rushed in into a neck 10 in the state of the closure of cap 2, the circulation cross section of a neck 10 will become narrow, and the liquid in the body section 1 will not go up to the inside of cap 2.

Therefore, scattering of the liquid at the time of opening can be prevented.

[0026] In order that the 12th bottle description machine may attain the above-mentioned purpose by this invention, to the upper limit opening 11 of the neck 10 which follows the body section 1 made of synthetic resin with which the liquid was filled up The bottle description machine containing a liquid characterized by forming the inside plug 23 which rushes in into said neck 10 inside said cap in the bottle description machine constituted so that the welding closure of the cap 2 made of synthetic resin might be carried out to a periphery and opening of the welding section 12 concerned might be fractured and carried out. According to the 12th bottle description machine, since the opening 11 of a container is closed by the inside plug 23, a rise of the liquid with which it fills up in the body section 1 is barred. Therefore, scattering of the liquid at the time of opening can be prevented.

[0027] To the upper limit opening 11 of the neck 10 which follows the body section 1 made of synthetic resin with which the liquid was filled up, the 13th bottle description machine by this invention in order to attain the above-mentioned purpose In the bottle description machine constituted so that the welding closure of the cap 2 made of synthetic resin might be carried out to a periphery and opening of the welding section 12 concerned might be fractured and carried out, it is characterized by packing the piece 3 of continuation pore porosity in said neck 10. According to the 13th bottle description machine, a rise of the liquid in the body section 1 is barred by the piece 3 of continuation pore porosity currently put in the neck 10, therefore liquid does not disperse at the time of opening. Moreover, when extruding a liquid from the body section 1 of a container, the liquid passes the piece 3 of continuation pore porosity.

[0028] The 14th bottle description machine by this invention is characterized by carrying out the welding closure of the cap 2 of the shape of an inside plug made of synthetic resin to the upper limit opening 11 of the neck 10 which follows the body section 1 made of synthetic resin with which the liquid was filled up inside in order to attain the above-mentioned purpose. Since, as for the 14th bottle description machine, the welding closure of the inside plug-like cap 2 is carried out to the interior to the opening 11 of a container, the liquid in the body section 1 has a rise prevented by the inside plug-like cap 2.

[0029] The bottle description machine by this invention is the optimal when the liquids with which it filled up in the body section 1 are the drugs of the eye lotion and others.

[0030]

[Example] The desirable example of the bottle description machine containing a liquid by this invention is explained referring to drawing 1 – drawing 19. The fragmentary sectional view showing an example of the bottle description machine according to this invention, the fragmentary sectional view showing the bottle description machine of the example of others [drawing 1 / $R > 2$], The fragmentary sectional view of the bottle description machine of the example of further others [drawing 3], the fragmentary sectional view of the bottle description machine of the example of further others [drawing 4], The top view of the body section [in / in drawing 5 / the bottle description machine of drawing 4]. The top view of the body section in the bottle description machine of the example of further others [drawing 6]. The bottle description machine of the example of further others the top view of the body section in the bottle description machine of the example of further others [drawing 7], and drawing 8 a part A fracture Fig., The fragmentary sectional view of the bottle description machine of the example of further others [drawing 9], the fragmentary sectional view of the bottle description machine of the example of further others [drawing 10]. The fragmentary sectional view of the bottle description machine of the example of further others [drawing 11], the fragmentary sectional view in which drawing 12 shows the modification of the bottle description machine of the example of drawing 1 . The fragmentary sectional view of the bottle description machine of the example of further others [drawing 13], the fragmentary sectional view of the bottle description machine of the example of further others [drawing 14], The fragmentary sectional view of the bottle description machine of the example of further others [drawing 15], the fragmentary sectional view of the bottle description machine of the example of further others [drawing 16], The fragmentary sectional view of the bottle description machine of the example of further others [drawing 17], the fragmentary sectional view of the bottle description machine of the example of further others [drawing 18], and drawing 19 are the fragmentary sectional views of

the bottle description machine of the example of further others.

[0031] According to the bottle description machine of drawing 1 in which the example of the bottle description machine corresponding to claim 1 is shown, the soft transparent body section 1 made of synthetic resin (for example, polyethylene) filled up with the liquids a, such as an eye lotion, has the neck 10 in one through the shoulder 13 to the upper part while having the piece 19 of maintenance in one to a pars basilaris ossis occipitalis. The piece 20 of maintenance is fabricated by the upper part of the cap 2 of the same quality of the material as the body section 1 at one, welding of this cap 2 is carried out to the periphery of the opening 11 (for example, bore of 1.5-2mm) of a neck 10, and the skirt-board section 21 is fabricated by the condition of surrounding a neck 10 in that lower part at one. While the bottle description machine of this example is fabricated by blow molding like the above-mentioned conventional container, it fills up with Liquid a similarly.

[0032] Opening of the bottle description machine of this example carries out, it leans a container in the shape of inversion, brings opening 11 close to an eye, and it is used for it in the way which pinches the body section 1 and extrudes the internal liquid a by having the piece 20 of maintenance of cap 2 by the hand of another side, while having the piece 19 of maintenance by one hand at the time of use, twisting cap 2, or pushing against the direction of the body section 1, and fracturing the welding section 12.

[0033] According to the bottle description machine of drawing 1 , when the welding section 12 of cap 2 and opening 11 is fractured as mentioned above and carries out opening, even if some liquids a have gone up and collected inside the cap 2, since the liquid is interrupted by said skirt-board section 21, it does not disperse.

[0034] For example, since the welding section 12 concerned is gradually fractured like drawing 12 , without fracturing at a stretch when [with the wavelike locus of the welding section 12] the closure is carried out so that it is, and may carry out and may become zigzag-like, scattering of the liquid which has collected inside the cap 2 will be prevented still better.

[0035] A circulation cross section is narrow and the bottle description machine of the example of drawing 2 corresponding to claim 3 forms the ***** neck 14 in extent with which the liquid a in the body section 1 does not go up in the direction of opening 11 to a neck 10. The neck 10 is reinforced by forming the tabular reinforcing rib 17 which is along a lengthwise direction so that the shoulder 13 of the body section 1 may be followed on the periphery of a neck 10. For example, when Liquid a is an eye lotion, as for the bore w1 of said neck 14, it is desirable that it is 1mm or less.

[0036] Since the circulation cross section of a neck 10 is narrow by said neck 14, when some liquids a with which it fills up in the body section 1 tend to go up to the direction of opening 11 according to the bottle description machine of drawing 2 , the liquid a plugs up said neck 14 with surface tension, and prevents a rise of a liquid with it. Therefore, scattering of Liquid a is prevented. Since other configurations and operations of a bottle description machine of the example of drawing 2 are the same as that of the bottle description machine of the example of drawing 1 , those explanation is omitted.

[0037] The bottle description machine of the example of drawing 3 corresponding to claim 4 formed the tabular reinforcing rib 17 along a lengthwise direction so that the shoulder 13 of the body section 1 might be followed on the periphery of the neck 10 concerned, and has reinforced the neck 10 while it forms the cross-section bore of a neck 10 small so that a circulation cross section may become narrow at extent to which the liquid a in the body section 1 does not go up in the direction of opening 11. For example, when Liquid a is an eye lotion, as for the bore w2 of said neck 10, it is desirable that it is 1mm or less.

[0038] Since the circulation cross section of a neck 10 is narrow when some liquids a with which it fills up in the body section 1 tend to go up to the direction of opening 11 according to the bottle description machine of drawing 3 , a liquid closes the neck 10 with surface tension, and prevents the rise with it. Therefore, the liquid inside a container does not disperse at the time of opening. Since other configurations and operations of a bottle description machine of the example of drawing 3 are the same as that of the bottle description machine of the example of drawing 1 , those explanation is omitted.

[0039] The curtain board 15 is formed in the condition that drawing 4 corresponding to claim 5 and the bottle description machine of the example of drawing 5 divide the circulation cross section of the neck 10 concerned into the interior of a neck 10. Since the circulation cross section of a part with the curtain board 15 of said neck 10 is narrow when some liquids a with which it fills up in the body section 1 tend to go up to the direction of opening 11 according to this bottle description machine, Liquid a closes that neck 10 with surface tension, and prevents a rise of Liquid a with it. Therefore, Liquid a does not disperse at the time of opening. Since other configurations and operations of a bottle description machine of the example of drawing 4 and drawing 5 are the same as that of the bottle description machine of the example of drawing 1 , those explanation is omitted.

[0040] Said curtain board 15 can be formed in the shape of a flat-surface cross joint, and a radial as drawing 6 shows.

[0041] The bottle description machine of the example of drawing 7 corresponding to claim 6 forms the protruding line 16 in the inner circumference section of a neck 10 along the die-length direction. Since the part with the protruding line 16 of said neck 10 is narrow when some liquids with which it fills up in the body section 1 tend to go up to the direction of opening 11 according to the bottle description machine of this example, a liquid closes that neck 10 with surface tension, and prevents a rise of a liquid with it. Therefore, a liquid does not disperse at the time of opening. Since other configurations and operations of a bottle description machine of the example of drawing 7 are the same as that of the bottle description machine of the example of drawing 1 , those explanation is omitted.

[0042] The bottle description machine of the example of drawing 8 corresponding to claim 7 is formed so that the internal cross section and great difference of the body section 1 may not have the circulation cross section of a neck 10.

According to the bottle description machine of this example, the internal cross section and great difference of a body 1 do not have the circulation cross section of a neck 10. By striking the pars basilaris ossis occipitalis of the container against hard flat surfaces, such as a floor and a desk, where it shook in the vertical direction where the container is stood, or the container is stood Since the liquid which has gone up and collected inside the cap 2 falls easily into the body section 1, it can prevent scattering of the liquid at the time of opening by opening cap 2, where the liquid which has collected inside the cap 2 is dropped into the body section 1 as mentioned above. Since other configurations and operations of a bottle description machine of the example of drawing 8 are the same as that of the bottle description machine of the example of

drawing 1 , those explanation is omitted.

[0043] The bottle description machine of the example of drawing 9 corresponding to claim 8 is constituted so that opening 11 may be formed in the shoulder 13 which follows the body section 1 with which Liquid a was filled up at upper limit, the welding closure of the inner circumference of the cap 2 made of synthetic resin may be carried out to the opening 11 concerned at a periphery and opening of the welding section 12 concerned may be fractured and carried out. Since according to the bottle description machine of this example there is no neck and opening 11 is formed in the upper limit of a shoulder 13. By striking the pars basilaris ossis occipitalis of the container against hard flat surfaces, such as a floor and a desk, where it shook in the vertical direction where the container is stood, or the container is stood Since the liquid which has gone up and collected inside the cap 2 falls easily into the body section 1, it can prevent scattering of the liquid at the time of opening by opening cap 2, where the liquid which has collected inside the cap 2 is dropped into the body section 1 as mentioned above. Since other configurations and operations of a bottle description machine of the example of drawing 9 are the same as that of the bottle description machine of the example of drawing 1 , those explanation is omitted.

[0044] The bottle description machine of the example of drawing 10 corresponding to claim 9 formed the neck 10 in extent to which the liquid in the body section 1 does not go up in the direction of said opening 11 for a long time, formed the same reinforcing rib 17 as the example of drawing 3 in the periphery of a neck 10, and has reinforced the neck 10. Since the liquid in the body section 1 stops being able to go up easily and the bottle description machine of this example is when the neck 10 is long, scattering of the liquid at the time of opening is prevented. Since other configurations and operations of a bottle description machine of this example are the same as that of the bottle description machine of the example of drawing 1 , those explanation is omitted.

[0045] The bottle description machine of the example of drawing 11 corresponding to claim 10 was fabricated in the condition of having bent the neck 10 while it made the bore of a neck 10 small, it formed the same reinforcing rib 17 in the periphery of a neck 10 also in drawing 3 , and has reinforced the neck 10. Since according to the bottle description machine of this example the neck 10 has bent and the liquid a in the body section 1 has stopped being able to go up easily, scattering of the liquid at the time of opening is prevented. Since other configurations and operations of a bottle description machine of this example are the same as that of the bottle description machine of the example of drawing 1 , those explanation is omitted.

[0046] The bottle description machine of the example of drawing 13 corresponding to claim 11 swells in the condition that a circulation cross section becomes large at said neck 10, and forms the section 18. When some liquids a in the body section 1 go up by the bottle description machine of this example swelling to a neck 10, and forming the section 18, that liquid will stop in said swelling section 18, and liquid will not go up in the upper part from the swelling section 18. Therefore, an internal liquid does not disperse at the time of opening. Since other configurations and operations of a bottle description machine of this example are the same as that of the bottle description machine of the example of drawing 1 , those explanation is omitted.

[0047] In the example which swells to a neck 10 and forms the section 18, when forming small the path of parts other than swelling section 18 of a neck 10 like drawing 14 and drawing 15 , it is desirable to form a reinforcing rib 17 in a neck 10, and to reinforce the neck 10 concerned. If two or more swellings 18 are formed like drawing 15 , they can prevent a rise of an internal liquid still better.

[0048] The bottle description machine of the example of drawing 16 corresponding to claim 13 forms the piece 22 of a circulation failure which rushes in into a neck 10 inside cap 2. Since the piece 22 of a circulation failure has rushed in into a neck 10 in the state of the closure of cap 2, as for the bottle description machine of this example, the circulation cross section of a neck 10 becomes narrow, the liquid in the body section 1 does not go up to the inside of cap 2, therefore Liquid a does not disperse at the time of opening. It can do. Since other configurations and operations of a bottle description machine of this example are the same as that of the bottle description machine of the example of drawing 1 , those explanation is omitted.

[0049] The bottle description machine of the example of drawing 17 corresponding to claim 14 forms the inside plug 23 which rushes in into a neck 10 inside cap 2. According to the bottle description machine of this example, since the opening 11 of a container is closed by the inside plug 23, a rise of the liquid with which it fills up in the body section 1 is barred, and a liquid does not disperse at the time of opening. Since other configurations and operations of a bottle description machine of this example are the same as that of the bottle description machine of the example of drawing 1 , those explanation is omitted.

[0050] As for the bottle description machine of the example of drawing 18 corresponding to claim 15, a piece 3 of continuation pore porosity like sponge is packed in the neck 10. According to this bottle description machine, a rise of the liquid in the body section 1 is barred by the piece 3 of continuation pore porosity currently put in the neck 10, therefore liquid does not disperse at the time of opening. Moreover, when extruding a liquid from the body section 1 of a container, the liquid passes the piece 3 of continuation pore porosity. Since other configurations and operations of a bottle description machine of this example are the same as that of the bottle description machine of the example of drawing 1 , those explanation is omitted.

[0051] The welding closure of the cap 2 of the shape of an inside plug made of synthetic resin is carried out to the interior of the upper limit opening 11 of a neck 10 the bottle description machine of the example of drawing 19 corresponding to claim 16 follows the body section 1. Since, as for the bottle description machine of this example, the welding closure of the inside plug-like cap 2 is carried out to the interior to the opening 11 of a container, as for the liquid in the body section 1, a rise is prevented with the inside plug-like cap 2, therefore a liquid does not disperse at the time of opening.

[0052]

[Effect of the Invention] According to the bottle description machine according to claim 1 by this invention, when opening of the welding section of a cap and opening is fractured and carried out, even if some liquids have gone up and collected inside the cap, since that liquid is interrupted by the skirt-board section, it does not disperse. According to the bottle description machine according to claim 2, since the locus of the welding section of opening and a cap is the shape of the

shape of a wave, and zigzag, fracture of the arrival section at the inside at the time of opening advances gradually, and scattering of liquid is prevented still better.

[0053] Since the circulation cross section of a neck is narrow by the neck, when some liquids with which body circles are filled up tend to go up to the direction of opening according to the bottle description machine according to claim 3, the liquid plugs up said neck with surface tension, and prevents a rise of a liquid with it. Therefore, scattering of Liquid a is prevented.

[0054] Since the circulation cross section of a neck is narrow when some liquids with which body circles are filled up tend to go up to the direction of opening according to the bottle description machine according to claim 4, a liquid prevents the rise by the neck **** with surface tension. Therefore, the liquid inside a container does not disperse at the time of opening.

[0055] Since the circulation cross section of a part with the curtain board of said neck is narrow when some liquids with which body circles are filled up tend to go up to the direction of opening according to the bottle description machine according to claim 5, a liquid closes the neck with surface tension, and prevents a rise of a liquid with it. Therefore, Liquid a does not disperse at the time of opening.

[0056] Since the part with the protruding line of said neck is narrow when some liquids with which body circles are filled up tend to go up to the direction of opening according to the bottle description machine according to claim 6, a liquid closes the neck with surface tension, and prevents a rise of a liquid with it. Therefore, a liquid does not disperse at the time of opening.

[0057] According to the bottle description machine according to claim 7, the internal cross section and great difference of a body do not have the circulation cross section of a neck. Since the liquid which has gone up and collected inside the cap by striking the pars basilaris ossis occipitalis of the container against hard flat surfaces, such as a floor and a desk, where it shook in the vertical direction where the container is stood, or the container is stood falls easily to body circles By opening a cap, where the liquid which has collected inside the cap is dropped to body circles as mentioned above, scattering of the liquid at the time of opening can be prevented.

[0058] Since according to the bottle description machine according to claim 8 there is no neck and opening is formed in the upper limit of a shoulder. Since the liquid which has gone up and collected inside the cap by striking the pars basilaris ossis occipitalis of the container against hard flat surfaces, such as a floor and a desk, where it shook in the vertical direction where the container is stood, or the container is stood falls easily to body circles By opening a cap, where the liquid which has collected inside the cap is dropped to body circles as mentioned above, scattering of the liquid at the time of opening can be prevented.

[0059] Since according to the bottle description machine according to claim 9 the liquid of body circles stops being able to go up easily and it is when the neck is long, scattering of the liquid at the time of opening is prevented.

[0060] Since according to the bottle description machine according to claim 10 the neck has bent and the liquid of body circles has stopped being able to go up easily, scattering of the liquid at the time of opening is prevented.

[0061] When some liquids of body circles go up by swelling to a neck and forming the section according to the bottle description machine according to claim 11, the liquid will stop at said swelling circles, and liquid will not go up in the upper part from the swelling section. Therefore, an internal liquid does not disperse at the time of opening.

[0062] According to the bottle description machine according to claim 12, the brittleness of a neck can be covered with a reinforcing rib.

[0063] According to the bottle description machine according to claim 13, since the piece of a circulation failure has rushed into the neck in the state of the closure of a cap, the circulation cross section of a neck becomes narrow, the liquid of body circles does not go up to the inside of a cap, therefore a liquid does not disperse at the time of opening. It can do.

[0064] According to the bottle description machine according to claim 14, since opening of a container is closed by the inside plug, a rise of the liquid with which body circles are filled up is barred, and a liquid does not disperse at the time of opening.

[0065] According to the bottle description machine according to claim 15, a rise of the liquid of body circles is barred by the piece of continuation pore porosity currently put in the neck, it is ** and liquid does not disperse at the time of opening. Moreover, when extruding a liquid from the body section of a container, the liquid passes the piece of continuation pore porosity.

[0066] According to the bottle description machine according to claim 16, since the welding closure of the inside plug-like cap is carried out to the interior to opening of a container, as for the liquid of body circles, a rise is prevented with an inside plug-like cap, therefore a liquid does not disperse at the time of opening.

[Translation done.]

* NOTICES *

JPO and NCIPI are not responsible for any damages caused by the use of this translation.

- 1.This document has been translated by computer. So the translation may not reflect the original precisely.
- 2.**** shows the word which can not be translated.
- 3.In the drawings, any words are not translated.

DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

[Drawing 1] It is the fragmentary sectional view showing an example of the bottle description machine by this invention.
[Drawing 2] It is the fragmentary sectional view showing the bottle description machine of other examples.
[Drawing 3] It is the fragmentary sectional view of the bottle description machine of the example of further others.
[Drawing 4] It is the fragmentary sectional view of the bottle description machine of the example of further others.
[Drawing 5] It is the top view of the body section in the bottle description machine of drawing 4.
[Drawing 6] It is the top view of the body section in the bottle description machine of the example of further others.
[Drawing 7] It is the top view of the body section in the bottle description machine of the example of further others.
[Drawing 8] some bottle description machines of the example of further others — it is a fracture Fig.
[Drawing 9] It is the fragmentary sectional view of the bottle description machine of the example of further others.
[Drawing 10] It is the fragmentary sectional view of the bottle description machine of the example of further others.
[Drawing 11] It is the fragmentary sectional view of the bottle description machine of the example of further others.
[Drawing 12] It is the fragmentary sectional view showing the modification of the bottle description machine of the example of drawing 1.
[Drawing 13] It is the fragmentary sectional view of the bottle description machine of the example of further others.
[Drawing 14] It is the fragmentary sectional view of the bottle description machine of the example of further others.
[Drawing 15] It is the fragmentary sectional view of the bottle description machine of the example of further others.
[Drawing 16] It is the fragmentary sectional view of the bottle description machine of the example of further others.
[Drawing 17] It is the fragmentary sectional view of the bottle description machine of the example of further others.
[Drawing 18] It is the fragmentary sectional view of the bottle description machine of the example of further others.
[Drawing 19] It is the fragmentary sectional view of the bottle description machine of the example of further others.
[Drawing 20] It is the perspective view showing an example of the conventional bottle description machine.
[Drawing 21] It is the partial expanded sectional view of the bottle description machine of drawing 20.

[Description of Notations]

- 1 Body Section
- 10 Neck
- 11 Opening
- 12 Welding Section
- 13 Shoulder
- 14 Neck
- 15 Curtain Board
- 16 Protruding Line
- 17 Reinforcing Rib
- 18 Swelling Section
- 19 Piece of Maintenance
- 2 Cap
- 20 Piece of Maintenance
- 21 Skirt-Board Section
- 22 Piece of Circulation Failure
- 23 Inside Plug
- 3 Piece of Continuation Pore Porosity
- Liquid

[Translation done.]

(19) 日本国特許庁 (JP)

(12) 公開特許公報 (A)

(11) 特許出願公開番号

特開平8-34422

(43) 公開日 平成8年(1996)2月6日

(51) Int.Cl.⁶
B 65 D 1/02

識別記号 E
A

F 1

技術表示箇所

A 61 J 1/05

A 61 J 1/00 3 1 3 Z

審査請求 未請求 請求項の数17 O.L (全10頁)

(21) 出願番号 特願平6-171346

(22) 出願日 平成6年(1994)7月22日

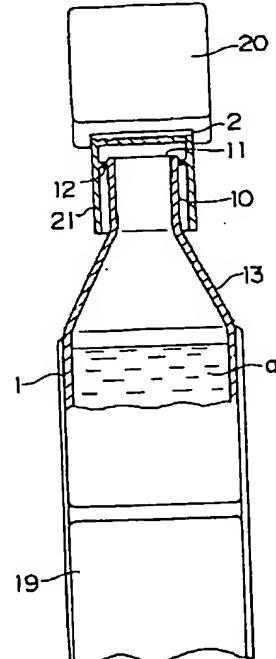
(71) 出願人 000002819
大正製薬株式会社
東京都豊島区高田3丁目24番1号
(72) 発明者 大槻 智宏
東京都豊島区高田3丁目24番1号 大正製
薬株式会社内
(72) 発明者 田中 重男
東京都豊島区高田3丁目24番1号 大正製
薬株式会社内
(72) 発明者 大内 順子
東京都豊島区高田3丁目24番1号 大正製
薬株式会社内
(74) 代理人 弁理士 河野 茂夫 (外1名)

(54) 【発明の名称】 液体入り瓶形容器

(57) 【要約】

【目的】 液体が充填された合成樹脂製の本体部1と連続する首部10の上端開口部11には、外周に合成樹脂製のキャップ2が融着封止され、当該融着部12を破断して開口するように構成した瓶形容器において、融着部12を破断して開封したときに内部の液体aが飛散しないようにした液体入り瓶形容器を提供すること。

【構成】 キャップ2の下部に前記首部10の全部又は一部を覆う状態にスカート部21を形成する。首部10の内部に当該首部10の流通断面を分割する状態に隔壁板又は凸条を形成する。首部10にくびれ部や脹らみ部を形成する。



1

〔特許請求の範囲〕

〔請求項1〕 液体が充填された合成樹脂製の本体部1と連続する首部10の上端開口部11には、外周に合成樹脂製のキャップ2が融着封止され、当該融着部12を破断して開口するように構成した瓶形容器において、前記キャップ2の下部には前記首部10の全部又は一部を覆う状態にスカート部21が形成されていることを特徴とする、液体入り瓶形容器。

〔請求項2〕 前記融着部12の軌跡が波状ないしジグザグ状である、請求項1に記載の液体入り瓶形容器。

〔請求項3〕 液体が充填された合成樹脂製の本体部1と連続する首部10の上端開口部11には、外周に合成樹脂製のキャップ2が融着封止され、当該融着部12を破断して開口するように構成した瓶形容器において、前記首部10には、前記本体部1内の液体が前記開口部11の方向へ上昇しない程度に流通断面が狭くなる状態に少なくとも一つのくびれ部14が形成されていることを特徴とする、液体入り瓶形容器。

〔請求項4〕 液体が充填された合成樹脂製の本体部1と連続する首部10の上端開口部11には、外周に合成樹脂製のキャップ2が融着封止され、当該融着部12を破断して開口するように構成した瓶形容器において、前記首部10は、前記本体部1内の液体が前記開口部11の方向へ上昇しない程度に流通断面が狭く形成されていることを特徴とする、液体入り瓶形容器。

〔請求項5〕 液体が充填された合成樹脂製の本体部1と連続する首部10の上端開口部11には、外周に合成樹脂製のキャップ2が融着封止され、当該融着部12を破断して開口するように構成した瓶形容器において、前記首部10の内部には、当該首部10の流通断面を分割する状態に隔壁板15が形成されていることを特徴とする、液体入り瓶形容器。

〔請求項6〕 液体が充填された合成樹脂製の本体部1と連続する首部10の上端開口部11には、外周に合成樹脂製のキャップ2が融着封止され、当該融着部12を破断して開口するように構成した瓶形容器において、前記首部10の内壁部の全長又はその長さ方向の一部には当該首部10の長さ方向に沿う凸条16が形成されていることを特徴とする、液体入り瓶形容器。

〔請求項7〕 液体が充填された合成樹脂製の本体部1と連続する首部10の上端開口部11には、外周に合成樹脂製のキャップ2が融着封止され、当該融着部12を破断して開口するように構成した瓶形容器において、前記首部10の流通断面は前記本体部1の内部断面積と大差がないことを特徴とする、液体入り瓶形容器。

〔請求項8〕 液体が充填された合成樹脂製の本体部1と連続する肩部13には上端に開口部11が形成され、当該開口部11には外周に合成樹脂製のキャップ2の内周が融着封止され、当該融着部12を破断して開口するように構成されていることを特徴とする、液体入り瓶形容器。

容器。

〔請求項9〕 液体が充填された合成樹脂製の本体部1と連続する首部10の上端開口部11には、外周に合成樹脂製のキャップ2が融着封止され、当該融着部12を破断して開口するように構成した瓶形容器において、前記首部10は前記本体部1内の液体が前記開口部11の方向へ上昇しない程度に長く形成されていることを特徴とする、液体入り瓶形容器。

〔請求項10〕 液体が充填された合成樹脂製の本体部1と連続する首部10の上端開口部11には、外周に合成樹脂製のキャップ2が融着封止され、当該融着部12を破断して開口するように構成した瓶形容器において、前記首部10は曲がっていることを特徴とする、液体入り瓶形容器。

〔請求項11〕 液体が充填された合成樹脂製の本体部1と連続する首部10の上端開口部11には、外周に合成樹脂製のキャップ2が融着封止され、当該融着部12を破断して開口するように構成した瓶形容器において、前記首部10には、流通断面が広くなる状態に少なくとも一つの脇らみ部18が形成されていることを特徴とする、液体入り瓶形容器。

〔請求項12〕 前記首部10の外周には、当該首部10の長さ方向に沿って前記本体部1の肩部13に連続する状態に一つ又は数個の板状の補強リブ17が形成されている、請求項3、4、9、10、11のいずれかに記載の液体入り瓶形容器。

〔請求項13〕 液体が充填された合成樹脂製の本体部1と連続する首部10の上端開口部11には、外周に合成樹脂製のキャップ2が融着封止され、当該融着部12を破断して開口するように構成した瓶形容器において、前記キャップの内側には前記首部10内に突入する流通障害片22が形成されていることを特徴とする、液体入り瓶形容器。

〔請求項14〕 液体が充填された合成樹脂製の本体部1と連続する首部10の上端開口部11には、外周に合成樹脂製のキャップ2が融着封止され、当該融着部12を破断して開口するように構成した瓶形容器において、前記キャップの内側には前記首部10内に突入する中栓23が形成されていることを特徴とする、液体入り瓶形容器。

〔請求項15〕 液体が充填された合成樹脂製の本体部1と連続する首部10の上端開口部11には、外周に合成樹脂製のキャップ2が融着封止され、当該融着部12を破断して開口するように構成した瓶形容器において、前記首部10内には連続気孔多孔片3が詰められていることを特徴とする、液体入り瓶形容器。

〔請求項16〕 液体が充填された合成樹脂製の本体部1と連続する首部10の上端開口部11には、内部に合成樹脂製の中栓状のキャップ2が融着封止されていることを特徴とする、液体入り瓶形容器。

50

〔請求項17〕 前記液体が医薬品である、請求項1～16のいずれかに記載の液体入り瓶形容器。

〔発明の詳細な説明〕

〔0001〕

〔産業上の利用分野〕 この発明は一般的には液体入り瓶形容器に関するものである。さらに具体的には、一回ないし数回使用する程度の比較的少量の医薬その他の液体を充填した合成樹脂製の容器であって、開口部(瓶口)にキャップが融着封止され、使用時には前記キャップをねじり又は容器本体の方に押し付けることによって、前記融着部を破断開口するように構成された液体入り瓶形容器に関するものである。

〔0002〕

〔従来の技術〕 一般的なこの種の液体入り瓶形容器は、図20及び図21で例示するように、医薬などの液体aを充填した合成樹脂製の本体部1の底部には一体に保持片19が形成され、本体部1には肩部13を介して首部10が一体に形成されており、首部10の開口部11の外周にはキャップ2が融着されている。キャップ2の上部には保持片20が一体に形成されており、使用時には、一方の手で保持片19を持つとともに他方の手でキャップ2の保持片20を持ち、キャップ2をねじるかあるいは本体部1の方に押し付けて融着部12を破断することによって開口させる。この種の瓶形容器は、液体aを充填して一個ずつ市販されることもあるが、通常は横方向に数個(例えば六個)並んだ状態で成形充填し、これを図示しない包装フィルムで包装して市販される。

〔0003〕 このような瓶形容器は、保持片19、肩部13及び首部10とを含む本体部1を成形する第1の金型と、キャップ2を成形するとともに当該キャップ2を開口部11の外周に融着させる第2の金型と、保持金型からなる三組の二つ割り金型(いずれの金型も図示しない)を使用し、以下のようにプロー成形しあつ液体aを充填する。

〔0004〕 各金型を成形姿勢に対向させて左右に離した状態にセットし、左右の金型の間に溶融した熱可塑性合成樹脂を筒状(パリソン)にして押し出し、パリソンが適当な長さ押し出された状態で第1の金型のみを合体させ、パリソンの上端を押出ノズル(図示しない)から切り離す。このとき、パリソンの下端を第1の金型によって封じるとともに、そのパリソンの上端を適切な左右間隔を保つように接近した最上部の保持金型によって保持させ、この状態で各金型を所定の位置に移動させ、パリソン内に滤過された圧縮空気を送り込んで当該パリソンを押し広げることによって保持片19、肩部13及び首部10を含む本体部1を成形する。この状態で圧縮空気を排出した後、図示しない充填ノズルにより本体部1内に液体aを充填する。この状態では、パリソンの上方部分は半溶解状態に保たれている。そして、中間位置の第2の金型を合体させることにより、キャップ2を成形

すると同時に、キャップ2の下端内周と開口部11の外周とを融着封止する。

〔0005〕

〔発明が解決しようとする課題〕 前述のように成形され、かつ液体aが充填される瓶形容器は、本体部1の内部が圧縮空気による加圧によりやや高圧になっているため、本体部1内に充填されている液体aの一部がキャップ2内側部に上昇し、キャップ2を前述のように開封したとき、上昇している前記液体aの一部が周囲に飛散することがしばしばあった。

〔0006〕 この発明の目的は、前記融着部12を破断して開封したときに内部の液体aが飛散しないように構成した液体入り瓶形容器を提供することにある。

〔0007〕

〔課題を解決するための手段及び作用〕 この発明による第1の瓶形容器は、前述の目的を達成するため、液体が充填された合成樹脂製の本体部1と連続する首部10の上端開口部11には、外周に合成樹脂製のキャップ2が融着封止され、当該融着部12を破断して開口するように構成した瓶形容器において、前記キャップ2の下部には前記首部10の全部又は一部を覆う状態にスカート部21を形成している。

〔0008〕 第1の瓶形容器によれば、キャップ2と開口部11との融着部12を破断して開口したとき、キャップ2の内側に上昇して溜まっている液体は前記スカート部21に遮られるため飛散しない。前記融着部12の軌跡が波状ないしジグザグ状であれば、当該融着部12は一気に破断せずに徐々に破断するため、キャップ2の内側に溜まっている液体の飛散はさらによく防止される。

〔0009〕 この発明による第2の瓶形容器は、前述の目的を達成するため、液体が充填された合成樹脂製の本体部1と連続する首部10の上端開口部11には、外周に合成樹脂製のキャップ2が融着封止され、当該融着部12を破断して開口するように構成した瓶形容器において、前記首部10には、前記本体部1内の液体が前記開口部11の方向へ上昇しない程度に流通断面が狭くなる状態に少なくとも一つのくびれ部14を形成している。

〔0010〕 第2の瓶形容器によれば、前記くびれ部14によって首部10の流通断面が狭くなっているため、本体部1内に充填されている液体の一部が開口部11の方へ上昇しようとするとき、その液体が表面張力によって前記くびれ部14を塞いで液体の上昇を阻止する。

〔0011〕 この発明による第3の瓶形容器は、前述の目的を達成するため、液体が充填された合成樹脂製の本体部1と連続する首部10の上端開口部11には、外周に合成樹脂製のキャップ2が融着封止され、当該融着部12を破断して開口するように構成した瓶形容器において、前記首部10は、前記本体部1内の液体が前記開口部11の方向へ上昇しない程度に流通断面を狭く形成し

ている。

【0012】第3の瓶形容器によれば、本体部1内に充填されている液体の一部が開口部11の方へ上昇しようとするとき、首部10の流通断面が狭くなっているために液体が表面張力によってその首部10を塞いで液体の上昇を阻止する。

【0013】この発明による第4の瓶形容器は、前述の目的を達成するため、液体が充填された合成樹脂製の本体部1と連続する首部10の上端開口部11には、外周に合成樹脂製のキャップ2が融着封止され、当該融着部12を破断して開口するように構成した瓶形容器において、前記首部10の内部には、当該首部10の流通断面を分割する状態に隔壁板15を形成している。

【0014】第4の瓶形容器によれば、本体部1内に充填されている液体の一部が開口部11の方へ上昇しようとするとき、前記首部10の隔壁板15がある部分が狭くなっているために、液体が表面張力によってその首部10を塞いで液体の上昇を阻止する。

【0015】この発明による第5の瓶形容器は、前述の目的を達成するため、液体が充填された合成樹脂製の本体部1と連続する首部10の上端開口部11には、外周に合成樹脂製のキャップ2が融着封止され、当該融着部12を破断して開口するように構成した瓶形容器において、前記首部10の内壁部の全長又はその長さ方向の一部には当該首部10の長さ方向に沿う凸条16を形成している。

【0016】第5の瓶形容器によれば、本体部1内に充填されている液体の一部が開口部11の方へ上昇しようとするとき、前記首部10の凸条16がある部分が狭くなっているために、液体が表面張力によってその首部10を塞いで液体の上昇を阻止する。

【0017】この発明による第6の瓶形容器は、前述の目的を達成するため、液体が充填された合成樹脂製の本体部1と連続する首部10の上端開口部11には、外周に合成樹脂製のキャップ2が融着封止され、当該融着部12を破断して開口するように構成した瓶形容器において、前記首部10の流通断面は前記本体部1の内部断面積と大差がないことを特徴とする、液体入り瓶形容器。

【0018】第6の瓶形容器によれば、首部10の流通断面が本体1の内部断面積と大差なく、その容器を立てた状態で上下方向に振るか、あるいはその容器を立てた状態でその容器の底部を床や机などの固い平面に打ちつけることにより、キャップ2の内側に上昇して溜まっている液体は本体部1内へ容易に下降するので、キャップ2の内側に溜まっている液体を前述のように本体部1内へ下降させた状態でキャップ2を開けることにより、開封時の液の飛散を防止することができる。

【0019】この発明による第7の瓶形容器は、前述の目的を達成するため、液体が充填された合成樹脂製の本体部1と連続する肩部13には上端に開口部11が形成

され、当該開口部11には外周に合成樹脂製のキャップ2の内周が融着封止され、当該融着部12を破断して開口するように構成している。

【0020】第7の瓶形容器によれば、首部がなく肩部13の上端に開口部11が形成されているため、その容器を立てた状態で上下方向に振るか、あるいはその容器を立てた状態でその容器の底部を床や机などの固い平面に打ちつけることにより、キャップ2の内側に上昇して溜まっている液体は本体部1内へ容易に下降するので、キャップ2の内側に溜まっている液体を前述のように本体部1内へ下降させた状態でキャップ2を開けることにより、開封時の液の飛散を防止することができる。

【0021】この発明による第8の瓶形容器は、前述の目的を達成するため、液体が充填された合成樹脂製の本体部1と連続する首部10の上端開口部11には、外周に合成樹脂製のキャップ2が融着封止され、当該融着部12を破断して開口するように構成した瓶形容器において、前記首部10を前記本体部1内の液体が前記開口部11の方向へ上昇しない程度に長く形成している。第8の瓶形容器によれば、首部10が長くなっていることにより、本体部1内の液体が上昇しにくくなっているため、開封時の液の飛散が防止される。

【0022】この発明による第9の瓶形容器は、前述の目的を達成するため、液体が充填された合成樹脂製の本体部1と連続する首部10の上端開口部11には、外周に合成樹脂製のキャップ2が融着封止され、当該融着部12を破断して開口するように構成した瓶形容器において、前記首部10を曲げた状態で成形している。第9の瓶形容器によれば、首部10が曲がっていて本体部1内の液体が上昇しにくくなっているために、開封時の液の飛散が防止される。

【0023】この発明による第10の瓶形容器は、前述の目的を達成するため、液体が充填された合成樹脂製の本体部1と連続する首部10の上端開口部11には、外周に合成樹脂製のキャップ2が融着封止され、当該融着部12を破断して開口するように構成した瓶形容器において、前記首部10には、流通断面が広くなる状態に少なくとも一つの脇らみ部18が形成されていることを特徴としている。すなわち、首部10に脇らみ部18が形成されていることにより、本体部1内の液体の一部が上昇するとき、この脇らみ部18内にその液が止まり、液は脇らみ部18から上方には上昇しなくなる。

【0024】前記第2、第3、第8、第9及び第10の瓶形容器においては、首部10の外周へ当該首部10の長さ方向に沿って前記本体部1の肩部13に連続する状態に一つ又は数個の板状の補強リブ17を形成するのが好ましい。補強リブ17を形成することにより、首部10が脆弱になるのを防止することができるからである。

【0025】この発明による第11の瓶形容器は、前述の目的を達成するため、液体が充填された合成樹脂製の

7
本体部1と連続する首部10の上端開口部11には、外周に合成樹脂製のキャップ2が融着封止され、当該融着部12を破断して開口するように構成した瓶形容器において、前記キャップの内側には前記首部10内に突入する流通障害片22が形成されていることを特徴としている。すなわち、キャップ2の封止状態で前記流通障害片22が首部10内に突入していると、首部10の流通断面が狭くなり、本体部1内の液体がキャップ2の内側まで上昇しない。したがって、開封時の液体の飛散を防止することができる。

【0026】この発明により第12の瓶形容器は、前述の目的を達成するため、液体が充填された合成樹脂製の本体部1と連続する首部10の上端開口部11には、外周に合成樹脂製のキャップ2が融着封止され、当該融着部12を破断して開口するように構成した瓶形容器において、前記キャップの内側には前記首部10内に突入する中栓23が形成されていることを特徴とする、液体入り瓶形容器。第12の瓶形容器によれば、中栓23によって容器の開口部11が塞がっているため、本体部1内に充填されている液体の上昇が妨げられる。したがって、開封時の液体の飛散を防止することができる。

【0027】この発明による第13の瓶形容器は、前述の目的を達成するため、液体が充填された合成樹脂製の本体部1と連続する首部10の上端開口部11には、外周に合成樹脂製のキャップ2が融着封止され、当該融着部12を破断して開口するように構成した瓶形容器において、前記首部10内には連続気孔多孔片3が詰められていることを特徴としている。第13の瓶形容器によれば、本体部1内の液体の上昇は首部10に詰められている連続気孔多孔片3によって妨げられ、したがって開封時に液は飛散しない。また、容器の本体部1から液体を押し出すときその液体は連続気孔多孔片3を通過する。

【0028】この発明による第14の瓶形容器は、前述の目的を達成するため、液体が充填された合成樹脂製の本体部1と連続する首部10の上端開口部11には、内部に合成樹脂製の中栓状のキャップ2が融着封止されていることを特徴としている。第14の瓶形容器は、容器の開口部11へ内部に中栓状のキャップ2が融着封止されているので、本体部1内の液体は中栓状のキャップ2によって上昇を阻止される。

【0029】この発明による瓶形容器は、本体部1内に充填された液体が目薬その他の医薬品である場合に最適である。

【0030】

【実施例】図1～図19を参照しながら、この発明による液体入り瓶形容器の好ましい実施例を説明する。図1はこの発明による瓶形容器の一例を示す部分断面図、図2は他の実施例の瓶形容器を示す部分断面図、図3はさらに他の実施例の瓶形容器の部分断面図、図4はさらに他の実施例の瓶形容器の部分断面図、図5は図4の瓶形

10

20

30

40

50

容器における本体部の平面図、図6はさらに他の実施例の瓶形容器における本体部の平面図、図7はさらに他の実施例の瓶形容器における本体部の平面図、図8はさらに他の実施例の瓶形容器の一部破断図、図9はさらに他の実施例の瓶形容器の部分断面図、図10はさらに他の実施例の瓶形容器の部分断面図、図11はさらに他の実施例の瓶形容器の部分断面図、図12は図1の実施例の瓶形容器の変形例を示す部分断面図、図13はさらに他の実施例の瓶形容器の部分断面図、図14はさらに他の実施例の瓶形容器の部分断面図、図15はさらに他の実施例の瓶形容器の部分断面図、図16はさらに他の実施例の瓶形容器の部分断面図、図17はさらに他の実施例の瓶形容器の部分断面図、図18はさらに他の実施例の瓶形容器の部分断面図、図19はさらに他の実施例の瓶形容器の部分断面図である。

【0031】請求項1に対応する瓶形容器の実施例を示す図1の瓶形容器によれば、目薬などの液体aを充填した柔らかく透明な合成樹脂（例えばポリエチレン）製の本体部1は、底部へ一体に保持片19を有するとともに、上部へ肩部13を介して首部10を一体に有している。本体部1と同じ材質のキャップ2の上部には保持片20が一体に成形されており、このキャップ2は首部10の開口部11（例えば内径1.5～2mm）の外周に融着され、その下部には首部10を囲む状態にスカート部21が一体に成形されている。この実施例の瓶形容器は、前述の従来の容器と同様にプロー成形によって成形されるとともに、液体aも同様に充填される。

【0032】この実施例の瓶形容器は、使用時には一方の手で保持片19を持つとともに他方の手でキャップ2の保持片20を持ち、キャップ2をねじるかあるいは本体部1の方に押し付けて融着部12を破断することによって開口させ、逆さ状に容器を傾けて開口部11を眼に近づけ、本体部1をつまんで内部の液体aを押し出す要領で使用する。

【0033】図1の瓶形容器によれば、キャップ2と開口部11との融着部12を前述のように破断して開口したとき、キャップ2の内側に液体aの一部が上昇して溜まっていても、その液体は前記スカート部21に遮られるため飛散しない。

【0034】例えば図12のように、融着部12の軌跡が波状ないしシグザグ状になるように封止されている場合には、当該融着部12は一気に破断せずに徐々に破断されるため、キャップ2の内側に溜まっている液体の飛散はさらによく防止されることになる。

【0035】請求項3に対応する図2の実施例の瓶形容器は、首部10に本体部1内の液体aが開口部11の方向へ上昇しない程度に流通断面が狭くななくびれ部14を形成している。首部10の外周へ本体部1の肩部13と連続するように縦方向に沿う板状の補強リブ17を形成することにより、首部10を補強している。例え

ば液体aが目薬である場合には、前記くびれ部14の内径w1は1mm以下であるのが好ましい。

【0036】図2の瓶形容器によれば、前記くびれ部14によって首部10の流通断面が狭くなっているため、本体部1内に充填されている液体aの一部が開口部11の方へ上昇しようとするとき、その液体aが表面張力によって前記くびれ部14を塞いで液体の上昇を阻止する。したがって、液体aの飛散が防止される。図2の実施例の瓶形容器の他の構成や作用は、図1の実施例の瓶形容器と同様であるのでそれらの説明は省略する。

【0037】請求項4に対応する図3の実施例の瓶形容器は、本体部1内の液体aが開口部11の方向へ上昇しない程度に流通断面が狭くなるように、首部10の断面内径を小さく形成するとともに、当該首部10の外周へ本体部1の肩部13と連続するように縦方向に沿う板状の補強リブ17を形成し、首部10を補強している。例えば液体aが目薬である場合には、前記首部10の内径w2は1mm以下であるのが好ましい。

【0038】図3の瓶形容器によれば、本体部1内に充填されている液体aの一部が開口部11の方へ上昇しようとするとき、首部10の流通断面が狭くなっているために、液体が表面張力によってその首部10を塞いでその上昇を阻止する。したがって、開封時に容器内部の液体は飛散しない。図3の実施例の瓶形容器の他の構成や作用は、図1の実施例の瓶形容器と同様であるのでそれらの説明は省略する。

【0039】請求項5に対応する図4及び図5の実施例の瓶形容器は、首部10の内部に、当該首部10の流通断面を分割する状態に隔壁板15が形成されている。この瓶形容器によれば、本体部1内に充填されている液体aの一部が開口部11の方へ上昇しようとするとき、前記首部10の隔壁板15がある部分の流通断面が狭くなっているために、液体aが表面張力によってその首部10を塞いで液体aの上昇を阻止する。したがって、開封時に液体aは飛散しない。図4及び図5の実施例の瓶形容器の他の構成や作用は、図1の実施例の瓶形容器と同様であるのでそれらの説明は省略する。

【0040】前記隔壁板15は、例えば図6で示すように平面十字状ないし放射状に形成することができる。

【0041】請求項6に対応する図7の実施例の瓶形容器は、首部10の内周部にその長さ方向に沿って凸条16を形成している。この実施例の瓶形容器によれば、本体部1内に充填されている液体の一部が開口部11の方へ上昇しようとするとき、前記首部10の凸条16がある部分が狭くなっているために、液体が表面張力によってその首部10を塞いで液体の上昇を阻止する。したがって、開封時に液体は飛散しない。図7の実施例の瓶形容器の他の構成や作用は、図1の実施例の瓶形容器と同様であるのでそれらの説明は省略する。

【0042】請求項7に対応する図8の実施例の瓶形容器

器は、首部10の流通断面が本体部1の内部断面積と大差がないように形成している。この実施例の瓶形容器によれば、首部10の流通断面が本体部1の内部断面積と大差なく、その容器を立てた状態で上下方向に振るか、あるいはその容器を立てた状態でその容器の底部を床や机などの固い平面に打ちつけることにより、キャップ2の内側に上昇して溜まっている液体は本体部1内へ容易に落下するので、キャップ2の内側に溜まっている液体を前述のように本体部1内へ落下させた状態でキャップ2を開けることにより、開封時の液の飛散を防止することができる。図8の実施例の瓶形容器の他の構成や作用は、図1の実施例の瓶形容器と同様であるのでそれらの説明は省略する。

【0043】請求項8に対応する図9の実施例の瓶形容器は、液体aが充填された本体部1と連続する肩部13には上端に開口部11が形成され、当該開口部11には外周に合成樹脂製のキャップ2の内周が融着封止され、当該融着部12を破断して開口するように構成している。この実施例の瓶形容器によれば、首部がなく肩部13の上端に開口部11が形成されているため、その容器を立てた状態で上下方向に振るか、あるいはその容器を立てた状態でその容器の底部を床や机などの固い平面に打ちつけることにより、キャップ2の内側に上昇して溜まっている液体は本体部1内へ容易に落下するので、キャップ2の内側に溜まっている液体を前述のように本体部1内へ落下させた状態でキャップ2を開けることにより、開封時の液の飛散を防止することができる。図9の実施例の瓶形容器の他の構成や作用は、図1の実施例の瓶形容器と同様であるのでそれらの説明は省略する。

【0044】請求項9に対応する図10の実施例の瓶形容器は、首部10を本体部1内の液体が前記開口部11の方向へ上昇しない程度に長く形成し、首部10の外周に図3の実施例と同様な補強リブ17を形成してその首部10を補強している。この実施例の瓶形容器は、首部10が長くなっていることにより、本体部1内の液体が上昇しにくくなっているため、開封時の液の飛散が防止される。この実施例の瓶形容器の他の構成や作用は、図1の実施例の瓶形容器と同様であるのでそれらの説明は省略する。

【0045】請求項10に対応する図11の実施例の瓶形容器は、首部10の内径を小さくするとともにその首部10を上げた状態に成形し、首部10の外周に図3におけると同様な補強リブ17を形成して首部10を補強している。この実施例の瓶形容器によれば、首部10が曲がっていて本体部1内の液体aが上昇しにくくなっているために、開封時の液の飛散が防止される。この実施例の瓶形容器の他の構成や作用は、図1の実施例の瓶形容器と同様であるのでそれらの説明は省略する。

【0046】請求項11に対応する図13の実施例の瓶形容器は、前記首部10に流通断面が広くなる状態に脇

11

らみ部18を形成している。この実施例の瓶形容器は、首部10に脹らみ部18が形成されていることにより、本体部1内の液体aの一部が上昇するとき、前記脹らみ部18内にその液が止まり、液は脹らみ部18から上方には上昇しなくなる。したがって、開封時に内部の液体は飛散しない。この実施例の瓶形容器の他の構成や作用は、図1の実施例の瓶形容器と同様であるのでそれらの説明は省略する。

【0047】首部10に脹らみ部18を形成する実施例において、図14及び図15のように首部10の脹らみ部18以外の部分の径を小さく形成する場合には、首部10に補強リブ17を形成して当該首部10を補強するのが好ましい。脹らみ18は、例えば図15のように複数形成すると、内部の液体の上昇をさらによく防止できる。

【0048】請求項13に対応する図16の実施例の瓶形容器は、キャップ2の内側に首部10内に突入する流通障害片22を形成している。この実施例の瓶形容器は、キャップ2の封止状態で流通障害片22が首部10内に突入しているので首部10の流通断面が狭くなり、本体部1内の液体がキャップ2の内側まで上昇せず、したがって、開封時に液体aは飛散しない。できる。この実施例の瓶形容器の他の構成や作用は、図1の実施例の瓶形容器と同様であるのでそれらの説明は省略する。

【0049】請求項14に対応する図17の実施例の瓶形容器は、キャップ2の内側に首部10内に突入する中栓23を形成している。この実施例の瓶形容器によれば、中栓23によって容器の開口部11が塞がっているため、本体部1内に充填されている液体の上昇が妨げられ、開封時に液体は飛散しない。この実施例の瓶形容器の他の構成や作用は、図1の実施例の瓶形容器と同様であるのでそれらの説明は省略する。

【0050】請求項15に対応する図18の実施例の瓶形容器は、首部10内にスポンジのような連続気孔多孔片3が詰められている。この瓶形容器によれば、本体部1内の液体の上昇は首部10に詰められている連続気孔多孔片3によって妨げられ、したがって開封時に液は飛散しない。また、容器の本体部1から液体を押し出すときその液体は連続気孔多孔片3を通過する。この実施例の瓶形容器の他の構成や作用は、図1の実施例の瓶形容器と同様であるのでそれらの説明は省略する。

【0051】請求項16に対応する図19の実施例の瓶形容器は、本体部1と連続する首部10の上端開口部11の内部に、合成樹脂製の中栓状のキャップ2が融着封止されている。この実施例の瓶形容器は、容器の開口部11へ内部に中栓状のキャップ2が融着封止されているので、本体部1内の液体は中栓状のキャップ2によって上昇を阻止され、したがって開封時に液体は飛散しない。

【0052】

12

【発明の効果】この発明による請求項1に記載の瓶形容器によれば、キャップと開口部との融着部を破断して開口したとき、キャップの内側に液体の一部が上昇して溜まっていても、その液体はスカート部に遮られるため飛散しない。請求項2に記載の瓶形容器によれば、開口部とキャップとの融着部の軌跡が波形状ないしジグザグ状になっているので、開封時の中着部の破断が徐々に進行して液の飛散をさらによく防止する。

【0053】請求項3に記載の瓶形容器によれば、くびれ部によって首部の流通断面が狭くなっているため、本体部内に充填されている液体の一部が開口部の方へ上昇しようとするとき、その液体が表面張力によって前記くびれ部を塞いで液体の上昇を阻止する。したがって、液体aの飛散が防止される。

【0054】請求項4に記載の瓶形容器によれば、本体部内に充填されている液体の一部が開口部の方へ上昇しようとするとき、首部の流通断面が狭くなっているために、液体が表面張力によってその首部塞いでその上昇を阻止する。したがって、開封時に容器内部の液体は飛散しない。

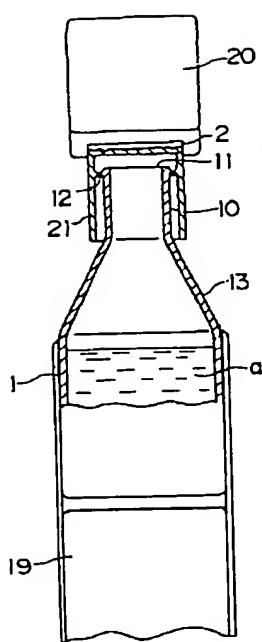
【0055】請求項5に記載の瓶形容器によれば、本体部内に充填されている液体の一部が開口部の方へ上昇しようとするとき、前記首部の隔壁板がある部分の流通断面が狭くなっているために、液体が表面張力によってその首部を塞いで液体の上昇を阻止する。したがって、開封時に液体aは飛散しない。

【0056】請求項6に記載の瓶形容器によれば、本体部内に充填されている液体の一部が開口部の方へ上昇しようとするとき、前記首部の凸条がある部分が狭くなっているために、液体が表面張力によってその首部を塞いで液体の上昇を阻止する。したがって、開封時に液体は飛散しない。

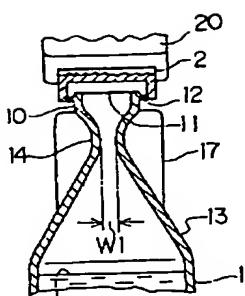
【0057】請求項7に記載の瓶形容器によれば、首部の流通断面が本体の内部断面積と大差がなく、その容器を立てた状態で上下方向に振るか、あるいはその容器を立てた状態でその容器の底部を床や机などの固い平面に打ちつけることにより、キャップの内側に上昇して溜まっている液体は本体部内へ容易に落下するので、キャップの内側に溜まっている液体を前述のように本体部内へ落させた状態でキャップを開けることにより、開封時の液の飛散を防止することができる。

【0058】請求項8に記載の瓶形容器によれば、首部がなく肩部の上端に開口部が形成されているため、その容器を立てた状態で上下方向に振るか、あるいはその容器を立てた状態でその容器の底部を床や机などの固い平面に打ちつけることにより、キャップの内側に上昇して溜まっている液体は本体部内へ容易に落下するので、キャップの内側に溜まっている液体を前述のように本体部内へ落させた状態でキャップを開けることにより、開封時の液の飛散を防止することができる。

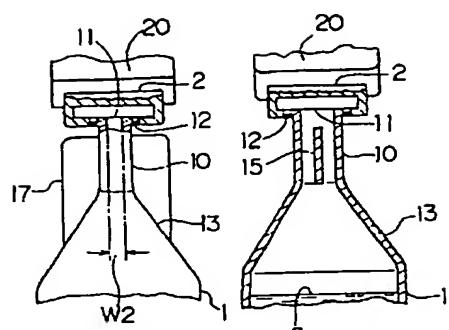
〔図1〕



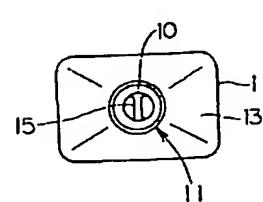
(図2)



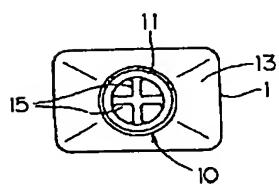
(图3)



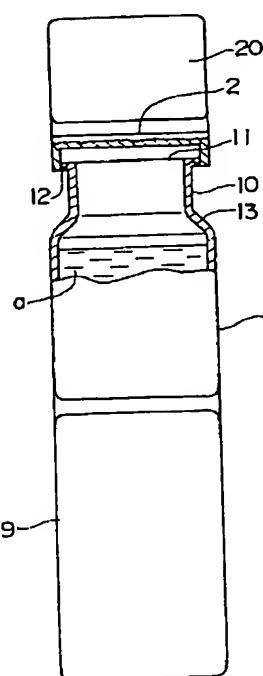
[図4]



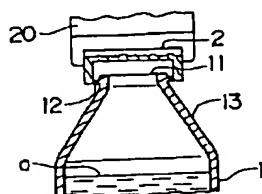
〔図6〕



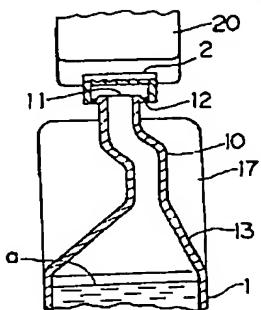
〔図8〕



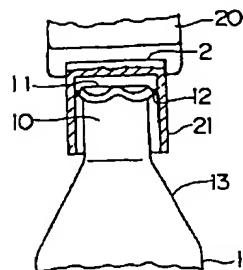
[図9]



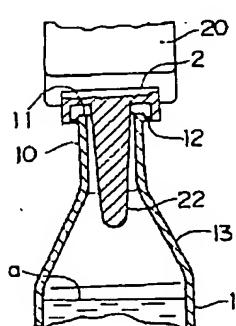
〔図11〕



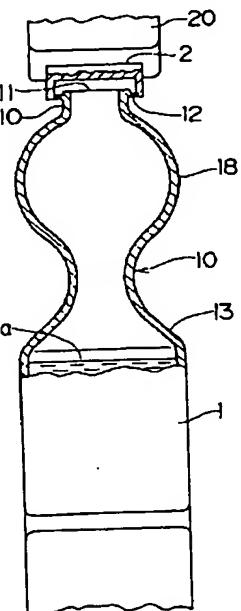
[図12]



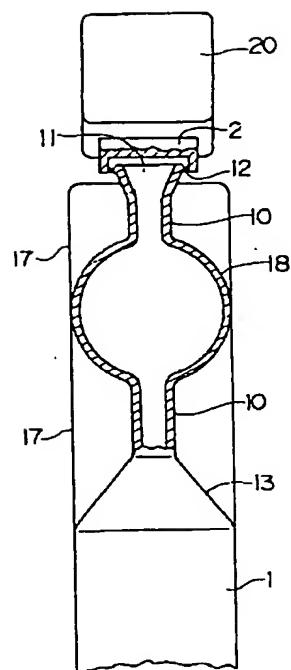
〔圖16〕



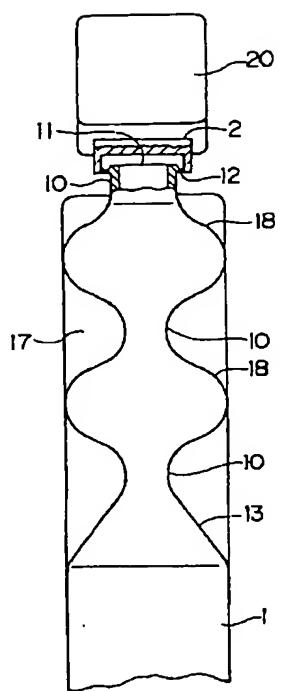
(四) 13)



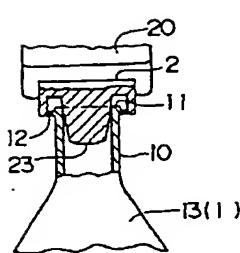
〔図14〕



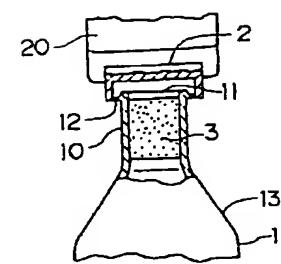
〔図15〕



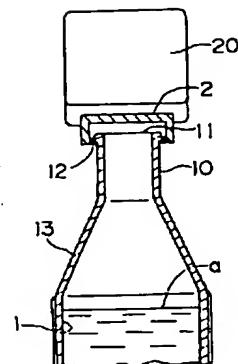
〔図17〕



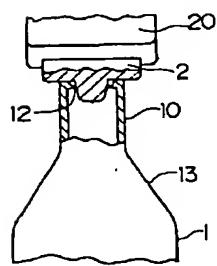
〔図18〕



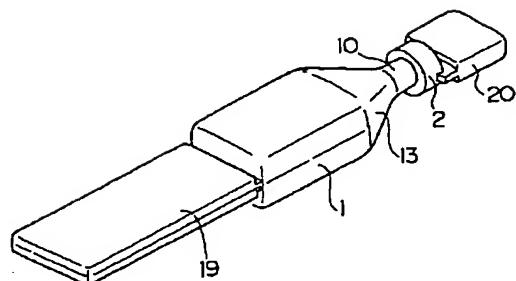
〔図21〕



〔図19〕



〔図20〕



【0059】請求項9に記載の瓶形容器によれば、首部が長くなっていることにより、本体部内の液体が上昇しにくくなっているため、開封時の液の飛散が防止される。

【0060】請求項10に記載の瓶形容器によれば、首部が曲がっていて本体部内の液体が上昇しにくくなっているために、開封時の液の飛散が防止される。

【0061】請求項11に記載の瓶形容器によれば、首部に脹らみ部が形成されていることにより、本体部内の液体の一部が上昇するとき、前記脹らみ部内にその液が止まり、液は脹らみ部から上方には上昇しなくなる。したがって、開封時に内部の液体は飛散しない。

【0062】請求項12に記載の瓶形容器によれば、補強リブによって首部の脆弱性がカバーできる。

【0063】請求項13に記載の瓶形容器によれば、キャップの封止状態で流通障害片が首部に突入しているので首部の流通断面が狭くなり、本体部内の液体がキャップの内側まで上昇せず、したがって、開封時に液体は飛散しない。できる。

【0064】請求項14に記載の瓶形容器によれば、中栓によって容器の開口部が塞がっているため、本体部内に充填されている液体の上昇が妨げられ、開封時に液体は飛散しない。

【0065】請求項15に記載の瓶形容器によれば、本体部内の液体の上昇は首部に詰められている連続気孔多孔片によって妨げられ、開封時に液は飛散しない。また、容器の本体部から液体を押し出すときその液体は連続気孔多孔片を通過する。

【0066】請求項16に記載の瓶形容器によれば、容器の開口部へ内部に中栓状のキャップが融着封止されているので、本体部内の液体は中栓状のキャップによって上昇を阻止され、したがって開封時に液体は飛散しない。

【図面の簡単な説明】

【図1】この発明による瓶形容器の一例を示す部分断面図である。

【図2】他の実施例の瓶形容器を示す部分断面図である。

【図3】さらに他の実施例の瓶形容器の部分断面図である。

【図4】さらに他の実施例の瓶形容器の部分断面図である。

【図5】図4の瓶形容器における本体部の平面図である。

【図6】さらに他の実施例の瓶形容器における本体部の平面図である。

【図7】さらに他の実施例の瓶形容器における本体部の

平面図である。

【図8】さらに他の実施例の瓶形容器の一部破断図である。

【図9】さらに他の実施例の瓶形容器の部分断面図である。

【図10】さらに他の実施例の瓶形容器の部分断面図である。

【図11】さらに他の実施例の瓶形容器の部分断面図である。

【図12】図1の実施例の瓶形容器の変形例を示す部分断面図である。

【図13】さらに他の実施例の瓶形容器の部分断面図である。

【図14】さらに他の実施例の瓶形容器の部分断面図である。

【図15】さらに他の実施例の瓶形容器の部分断面図である。

【図16】さらに他の実施例の瓶形容器の部分断面図である。

【図17】さらに他の実施例の瓶形容器の部分断面図である。

【図18】さらに他の実施例の瓶形容器の部分断面図である。

【図19】さらに他の実施例の瓶形容器の部分断面図である。

【図20】従来の瓶形容器の一例を示す斜視図である。

【図21】図20の瓶形容器の部分拡大断面図である。

【符号の説明】

1	本体部
10	首部
11	開口部
12	融着部
13	肩部
14	くびれ部
15	隔壁板
16	凸条
17	補強リブ
18	脹らみ部
19	保持片
2	キャップ
20	保持片
21	スカート部
22	流通障害片
23	中栓
3	連続気孔多孔片
a	液体

**This Page is Inserted by IFW Indexing and Scanning
Operations and is not part of the Official Record**

BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images include but are not limited to the items checked:

- BLACK BORDERS**
- IMAGE CUT OFF AT TOP, BOTTOM OR SIDES**
- FADED TEXT OR DRAWING**
- BLURRED OR ILLEGIBLE TEXT OR DRAWING**
- SKEWED/SLANTED IMAGES**
- COLOR OR BLACK AND WHITE PHOTOGRAPHS**
- GRAY SCALE DOCUMENTS**
- LINES OR MARKS ON ORIGINAL DOCUMENT**
- REFERENCE(S) OR EXHIBIT(S) SUBMITTED ARE POOR QUALITY**
- OTHER:** _____

IMAGES ARE BEST AVAILABLE COPY.

As rescanning these documents will not correct the image problems checked, please do not report these problems to the IFW Image Problem Mailbox.